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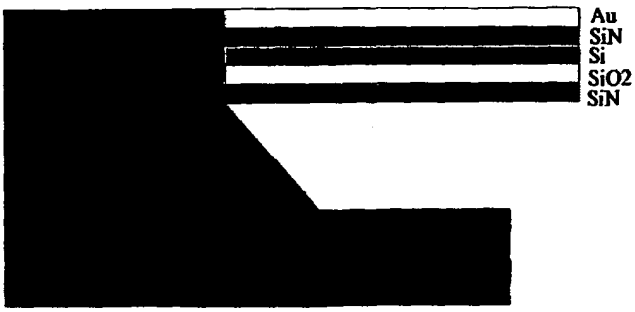
(54) Title: A CANTILEVER SENSOR USING BOTH THE LONGITUDINAL AND THE TRANSVERSAL PIEZORESISTIVE COEFFICIENTS



(57) Abstract: The present invention relates to a sensor comprising least one sensor unit e.g. a cantilever. The sensor unit comprises a capture surface area and a piezoresistive detection system, for direct detection of stress change of the sensor unit when applying an electrical field over the piezoresistive element. The piezoresistive element has a longitudinal direction in the current direction and a transverse direction perpendicular there to. The longitudinal direction and the transverse direction each has a stress composant and a current composant. The piezoresistive element is of an anisotropic material, and is arranged so that the numerically value of the sum of the longitudinal piezoresistive coefficient π_l and the transverse piezoresistive coefficient π_t along at least 25% of the length, of the piezoresistive element is at least 10^{-10} Pa^{-1}x P, such as $2x10^{-10}Pa^{-1}$ x P. such as $3x10^{-10}Pa^{-1}$ x P, such as 4 x $10^{-10}Pa^{-1}$ x P, wherein P is the piezoresistance factor, and wherein the piezoresistive coefficients π_l and π_t are determined as composants in the coordinate system used to determine the longitudinal direction.

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